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1. (Amended) A base oil suitable for use in an engine oil which comprises an oligomer mixture of trimer and higher oligomers derived from an alpha olefin feed consisting essentially of 1-dodecene wherein said oligomer mixture contains less than 2 weight percent of combined monomer and dimer.
  2. (Amended) A base oil according to claim 1 wherein the base oil consists essentially of trimer and higher oligomers of said 1-dodecene.
  3. (Amended) The base oil of claim 2 wherein said alpha olefin feed consists essentially of at least 85% by weight said 1-dodecene.
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6. (Amended) An engine oil according to claim 5 having an SAE viscosity grade of 0W-20-40 comprising from 15 to 85% by weight of the base oil which is comprised of

5 from 50 to 85% by weight of PAO, wherein at least 15%  
by weight of said PAO is derived from said 1-dodecene.

5 7. (Amended) An engine oil according to claim 5 having an  
SAE viscosity grade of 5W-20-50 comprising from 15 to  
85% by weight of the base oil which is comprised of from  
15 to 50% by weight of PAO, wherein at least 15% by  
weight of said PAO is derived from said 1-dodecene.

A2

5 8. (Amended) An engine oil according to claim 5 having an  
SAE viscosity grade of 10W-20-50 comprising from 15 to  
85% by weight of the base oil which is comprised of from  
5 to 35% by weight of PAO, wherein at least 15% by  
weight of said PAO is derived from said 1-dodecene.

9. (Amended) A method for improving the thermal stability,  
oxidative stability, and volatility characteristics of engine  
oil which comprises using a base oil comprised of PAO

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derived from a linear alpha olefin feed consisting  
essentially of 1-dodecene.

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13. (Amended) An engine oil able to pass the VW T-4, VW TDI, or Sequence IIIE tests which comprises from about 5 to about 85 weight percent of a base oil, from 0 to about 20 weight percent of at least one ashless dispersant, from 0 to about 30 weight percent of detergent, from 0 to about 10 weight percent of at least one oxidation inhibitor, from 0 to about 1 weight percent of at least one foam inhibitor, and from 0 to about 20 weight percent of at least one viscosity improver, wherein the base oil comprises a mixture of trimer and higher oligomers derived from an alpha olefin feed consisting essentially of 1-dodecene and wherein said oligomer mixture contains less than 2 weight percent of combined monomer and trimer.
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14. (Amended) The engine oil of claim 13 wherein the base oil consists of trimer and higher oligomers derived from said 1-dodecene.
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Please ~~add~~ the following new claims 15-28.

15. (New) A base oil suitable for use in an engine oil which comprises an oligomer mixture of trimer and higher oligomers derived from an alpha olefin feed consisting essentially of 1-tetradecene wherein said oligomer mixture contains less than 2 weight percent of combined monomer and dimer.

16. (New) A base oil according to claim 15 wherein the base oil consists essentially of trimer and higher oligomers of said 1-tetradecene.

17. (New) The base oil of claim 16 wherein said alpha olefin feed consists essentially of at least 85% by weight said 1-tetradecene.

18. (New) An engine oil comprising between 50% and 85% by weight of the base oil of claim 15.

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19. (New) The engine oil of claim 18 further including from 0 to about 20 weight percent of at least one ashless dispersant, from 0 to about 30 weight percent of detergent, from 0 to about 5 weight percent of at least one anti-wear agent, from 0 to about 10 weight percent of at least one oxidation inhibitor, from 0 to about 1 weight percent of at least one foam inhibitor, and from 0 to about 20 weight percent of at least one viscosity improver.

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20. (New) An engine oil according to claim 19 having an SAE viscosity grade of 0W-20-40 comprising from 15 to 85% by weight of the base oil which is comprised of from 50 to 85% by weight of PAO, wherein at least 15% by weight of said PAO is derived from said 1-tetradecene.

21. (New) An engine oil according to claim 19 having an SAE viscosity grade of 5W-20-50 comprising from 15 to 85% by weight of the base oil which is comprised of from

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15 to 50% by weight of PAO, wherein at least 15% by  
weight of said PAO is derived from said 1-tetradecene.

22. (New) An engine oil according to claim 19 having an  
SAE viscosity grade of 10W-20-50 comprising from 15 to  
85% by weight of the base oil which is comprised of from  
5 to 35% by weight of PAO, wherein at least 15% by  
weight of said PAO is derived from said 1-tetradecene.

23. (New) A method for improving the thermal stability,  
oxidative stability, and volatility characteristics of engine  
oil which comprises using a base oil comprised of PAO  
derived from a linear alpha olefin feed consisting  
essentially of 1-tetradecene.

24. (New) The method of claim 23 wherein the PAO has a  
viscosity at 100°C of between about 3.5 to about 9.5  
centistokes.

25. (New) The method of claim 24 wherein the PAO has an approximate viscosity at 100°C of 5 centistokes.
26. (New) The method of claim 24 wherein the PAO has an approximate viscosity at 100°C of 7 centistokes.
27. (New) An engine oil able to pass the VW T-4, VW TDI, or Sequence IIIE tests which comprises from about 5 to about 85 weight percent of a base oil, from 0 to about 20 weight percent of at least one ashless dispersant, from 0 to about 30 weight percent of detergent, from 0 to about 10 weight percent of at least one oxidation inhibitor, from 0 to about 1 weight percent of at least one foam inhibitor, and from 0 to about 20 weight percent of at least one viscosity improver, wherein the base oil comprises a mixture of trimer and higher oligomers derived from an alpha olefin feed consisting essentially of 1-tetradecene and wherein said oligomer

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mixture contains less than 2 weight percent of combined monomer and trimer.

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28. (New) The engine oil of claim 27 wherein the base oil consists of trimer and higher oligomers derived from said 1-tetradecene.
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